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Mullins J.I.;
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202 Aa; 22411 MW; A6257A189FE04103 CRC64;
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                                                                                                                                                                                                                                                                                                                                              Human immunodeficiency virus 1.
Viruses; Retroid viruses; Retroviridae; Lentivirus.
NCBI_TaxID=11676;
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01-JUL-1997 (TrEMBLrel. 04, Created)
01-JUL-1997 (TrEMBLrel. 04, Last sequence update)
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Envelope glycoprotein (Fragment).
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82.6%; Pred. No. 4.6e-06;
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J. Virol. 71:4284-4295(1997)
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Copyright (c) 1993 - 2004 Compugen Ltd.
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1 KQIINMWQEVGKAMYAKAFSPEVIPMF 27
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using sw model protein search, OM protein

December 29, 2004, 14:29:56 ; Search time 38 Seconds (without alignments) 68.365 Million cell updates/sec Run on:

US-10-753-339-25

1 KOIINMWQEVGKAMYAKAFSPEVIPMF 27 Perfect score: Sequence:

BLOSUM62 Gapop 10.0 , Gapext 0.5 Scoring table:

283416 seqs, 96216763 residues Searched:

Total number of hits satisfying chosen parameters:

Minimum DB seq length: 0 Maximum DB seq length: 200000000

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Listing first 45 summaries

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## ALIGNMENTS

RESULT 1 S33985

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env polyprotein - human immunodeficiency virus type 1
Cispecies: human immunodeficiency virus type 1
Cispecies: human immunodeficiency virus type 1, HIV-1
Cispecies: human immunodeficiency virus type 1, HIV-1
Cispecies: humar-1997 #sequence_revision 19-Mar-1997 #text_change 09-Jul-2004
Cispecies: Sispecience number: Sispecience Air Sispecience number: Sispecience Nature: preliminary
Air Sections in RNA
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A;Cross-references: UNIPROT:Q78243; EMBL:Z11530; NID:g60192; PIDN:CAA77628.1; PID:g601 C;Superfamily: type E retrovirus env polyprotein

Gaps ö Length 851; 4; Indels 63.4%; Score 90; DB 2; I 73.9%; Pred. No. 2.1e-05; ive 2; Mismatches 4; Query Match Best Local Similarity 73.9° Matches 17; Conservative

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## RESULT 2

polyprotein precursor - human immunodeficiency virus type 1 (isolate HTLV-III, BH1 env polyprotein precursor - human immunodeficiency vir N;Alternate names: coat polyprotein C;Species: human immunodeficiency virus type 1, HIV-1

A.Note: host Homo sapiens (man)
C;Date: 17-May-1985 #sequence\_revision 17-May-1985 #text\_change 09-Jul-2004
C;Date: 17-May-1985 #sequence\_revision 17-May-1985 #text\_change 09-Jul-2004
C;Accession: A03973
R;Ratner, L.; Haseltine, W.; Patarca, R.; Livak, K.J.; Starcich, B.; Josephs, S.F.; Donberger, J.A.; Papas, T.S.; Ghrayeb, J.; Chang, N.T.; Gallo, R.C.; Wong-Staal, F.
Nature 313, 277-284, 1985
A;Title: Complete mucleotide sequence of the AIDS virus, HTLV-III.
A;Reference number: A93353; MUID:85111123; PMID:2578615

A; Accession: A03973

A,Molecule type: DNA A,Residues: 1-856 <RAT> A,Cross.references: UNIPROT:P03375; GB:M15654; GB:K02008; GB:K02009; GB:K02010; NID:g3

C,Superfamily: type E retrovirus env polyprotein
C,Superfamily: type E retrovirus env polyprotein; glycoprotein; immunodeficiency; polypr
C;Keywords: AIDS; capsid protein; coat protein; glycoprotein; immunodeficiency; polypr
C;R-131-511/Product: exterior membrane glycoprotein #status predicted <EXT>
F;31-511/Product: transmembrane glycoprotein #status predicted <TWM>
F;512-856/Product: transmembrane glycoprotein #status predicted <TWM>
F;88-136.141,156,160,186,197,230,234,241,262,276,289,295,301,332,339,356,392,397,4
F;611,616,625,637,674,750,816/Binding site: carbohydrate (Asn) (covalent) #status pred

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6/ptodata/1/paa/US092_COMB.pep:
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6/ptodata/1/paa/US097A_COMB.pep:
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Copyright (c) 1993 - 2004 Compugen Ltd.
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1 KQIINMWQEVGKAMYAKAFSPEVIPMF 27
                                                           December 29, 2004, 14:37:51
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Maximum Match 100%
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Maximum DB seq length: 200000000
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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Sequence 86890, Sequence 45525, Sequence 45920, Sequence 45923, Sequence 45934, Sequence 77855, Sequence 77857, Seguence 25, Appl Sequence 45937, Sequence 102, Sequence 25, A Sequence 102, Sequence 102 Sequence 25, Sequence 102 Sequence 25 Sequence 25 Sequence 10 Sequence (Sequence (Sequen Sequence PCT-US01-03540-25
PCT-US01-03540-102
PCT-US01-035404-102
US-09-775-805-25
US-09-775-805-25
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US-09-791-537-77867
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US-09-791-537-77867
US-09-791-537-77867
US-09-791-537-77867 B Query Match Length 100.0 100.0 100.0 100.0 100.0 65.2 65.5 Score Result '

Sequence 25, Application PC/TUS0103540
GENERAL INFORMATION:
APPLICANT: DUKE UNIVERSITY
TITLE OF INVENTION: HUMAN IMMUNODEFICIENCY VIRUS VACCINE
FILE REFERENCE: 1579-547
CURRENT APPLICATION NUMBER: PCT/US01/03540
CURRENT FILING DATE: 2001-02-05
PRIOR APPLICATION NUMBER: 09/497,497
PRIOR PILING DATE: 2000-02-04
NUMBER OF SEQ ID NOS: 107
SOFTWARE: Patentin Ver. 2.1
SEQ ID NO 25
LENGTH: 27 ORGANISM: Homo sapiens PCT-US01-03540-25 PCT-US01-03540-25 TYPE: PRT

Query Match

DB 1; Length 27; 100.0%; Score 142;

Perfect

Run on:

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US-10-125-468-32

US-10-286-332A-33

US-10-286-332A-33

US-10-286-332A-33

US-10-286-32A-33

US-10-286-32A-33

US-10-286-32A-35

US-10-441-949-2

US-10-441-949-2

US-10-441-949-2

US-10-286-332A-53

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US-10-31-472-3

US-10-371-472-3

US-10-366-331-11
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US-09-775-805-102
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Sequence 12, Appl
Sequence 12, Appl
Sequence 12, Appl
Sequence 2, Appli
Sequence 9, Appli
Sequence 12, Appli
Sequence 16, Appl
Sequence 16, Appl
Sequence 18, Appl
Sequence 18, Appl
Sequence 18, Appl
Sequence 18, Appl
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score greater than or equal to the score of the result being printed,
and is derived by analysis of the total score distribution.
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67.921 Million cell updates/sec
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| cgm2 = f/ptodata/2/pubpaa/USOO NEW_PUB.Pep:*
                                                                                                                                                                                          ; Search time 143 Seconds
                                                    GenCore version 5.1.6
Copyright (c) 1993 - 2004 Compugen Ltd.
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US-09-775-805-102
VS-10-753-339-102
US-10-753-339-102
US-09-966-931-12
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US-10-325-468-38
US-10-325-468-15
US-10-325-468-29
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1 KQIINWMQEVGKAMYAKAFSPEVIPWF 27
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Listing first 45 summaries
                                                                                                                                                                                             December 29, 2004, 14:40:26
                                                                                                                                              - protein search, using sw model
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Sequence 53, Sequence 53, Sequence 55, Sequence 55,

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Sequence 25, Application US/09775805
; Sequence 25, Application US/09775805
; Publication No. US2010036461A1
; GENERAL INFORMATION:
APPLICANT: DUKE UNIVERSITY
; TITLE OF INVENTION: HUMAN IMMUNODEFICIENCY VIRUS VACCINE
FILE REFERENCE: 1579-548
; CURRENT FILING DATE: 2010-02-05
; PRIOR APPLICATION NUMBER: 09/497,497
; PRIOR PILING DATE: 2000-02-04
; NUMBER OF SEQ ID NOS: 107
; SOFTHARE: PATENTIN Ver. 2.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 102, Application US/09775805
Publication No. US20010036461A1
GENERAL INFORMATION:
APPLICANT: DUKE UNIVERSITY
TITLE OF INVENTION: HUMAN IMMUNODEFICIENCY VIRUS VACCINE
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Result Š.

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Sequence 24, Application US/08455625

Patent No. 5932218

GENERAL INFORMATION:

APPLICANT: Berzofsky, Jay A.

APPLICANT: Ahlers, Jeffrey D.

APPLICANT: Ablers, Jeffrey D.

APPLICANT: Ablers, Jeffrey D.

APPLICANT: Ablers, Jeffrey D.

APPLICANT: Ablers, Jeffrey D.

APPLICANT: Shirai, Mutsunori

TITLE OF INVENTION: COMPOSITE SYNTHETIC PEPTIDE CONSTRUCT

TITLE OF INVENTION: LYMPHOCYTES AGAINST HIV

TITLE OF INVENTION: LYMPHOCYTES AGAINST HIV

NUMBER OF SEQUENCES: 36

CORRESPONDENCE ADDRESS:

ADDRESSEE: Birch, Stewart, Kolasch & Birch

STREET: P.O. Box 747

CITY: Falls Church

STATE: Virginia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ZIP: 22040-0747

ZIP: 22040-07747

CMPUTER READABLE PORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/455,625
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PILLING DATE:
CLASSIFICATION: 435
CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/060,988
FILLING DATE: 14-MAY-1993
ATORNEY/AGENT INFORMATION:
NAME: Svenseon, Leonard R.
REGISTRATION NUMBER: 30330
REFERENCE/DOCKET NUMBER: 1173-434P
TELECOMMUNICATION INFORMATION:
TELEFRONE: 703-205-8000
TELEFRAX: 703-205-8000
TELEFRAX: 703-205-8000
TELEFRAX: 703-205-8050
SEQUENCE CHARACTERISTICS:
LENGTH: 24 amino acids
TENGTH: 24 amino acids
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FRAGMENT TYPE: internal
FRATURE:
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Sequence 3, Appl
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                                                                                                    December 29, 2004, 14:31:10 ; Search time 38 Seconds (without alignments) 47.121 Million cell updates/sec
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/cgm2_6/ptodata/11/iaa/PCTUS_COMB.pep:*
/cgm2_6/ptodata/11/iaa/PCTUS_COMB.pep:*
GenCore version 5.1.6
Copyright (c) 1993 - 2004 Compugen Ltd.
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US-08-455-685-24

US-08-605-988A-24

US-09-508-552-18

PCT-US94-05142-24

US-08-488-252-1

US-08-488-252-1

US-09-492-739-12

PCT-US92-06688-1

US-08-455-625-2

US-08-455-685-2

US-08-455-685-2
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PCT-US94-05142-2
PCT-US93-07805-1
US-08-889-841B-12
US-08-889-841B-16
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1 KQIINMWQEVGKAMYAKAFSPEVIPMF 27
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                                                                                                                                                                                                                                                                                                         478139 seqs, 66318000 residues
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                                                                OM protein - protein search, using sw model
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Maximum Match 100%
Listing first 45 summaries
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Gapop 10.0 , Gapext 0.5
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US-08-463-210-11	118-08-463-028-11	T# 070 COT 00 CO	US-08-788-815-7	US-09-157-963-7	112-00-569-105-7	/-CAT-800-CA-80	US-08-488-252-7	US-08-105-483-444	TIS-08-709-200-444	FFF- COT COT CO CO	US-08-303-275-155	US-08-458-101-444	01 4070-017	0T-W047-7/4-00-00	US-09-337-387-3	US-07-956-483-13	TIG-00-472-340A-4	F-W047-7/4-00-00	US-08-889-841B-31	110-00-410-262-21	TC-70C-6TE-60-00	US-08-889-841B-33	US-09-419-362-33	
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## ALIGNMENTS

GenCore version 5.1.6 Copyright (c) 1993 - 2004 Compugen Ltd.

OM protein - protein search, using sw model

Run on:

December 29, 2004, 14:03:20 ; Search time 159 Seconds (without alignments) 60.916 Million cell updates/sec

US-10-753-339-25 142 1 KQIINMWQEVGKAMYAKAPSPEVIPMF 27

Perfect score:

Sequence:

Scoring table:

2002273 seqs, 358729299 residues BLOSUM62 Gapop 10.0 , Gapext 0.5 Searched:

2002273 Total number of hits satisfying chosen parameters:

Minimum DB seq length: 0 Maximum DB seq length: 200000000

Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries

A\_Geneseq\_23Sep04:\* Database :

geneseqp20028;\* geneseqp2003as;\* geneseqp2003bs;\* geneseqp20048;\* geneseqp1990s:\* geneseqp2000s:\* geneseqp2001s:\* geneseqp1980s:\*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARTES

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## ALIGNMENTS

RESULT 1

Human immunodeficiency virus, HIV; immunogen, vaccine; anti-HIV; human leukocyte antigen; HLA; T-helper epitope; CIL; Th; epitope; major histocompatibility complex; MHC; cytotoxic T-lymphocyte; Vaccinia ankara. HIV Th-CTL peptide prototype vaccine immunogen #13. AAU12476 standard; peptide; 27 AA. (first entry) 27-SEP-2001 AAU12476; AAU12476 ID AAU 

WO200156355-A2. Homo sapiens.

09-AUG-2001.

05-FEB-2001; 2001WO-US003540.

04-FEB-2000; 2000US-00497497

(UYDU-) UNIV DUKE.

Haynes BF, Liao H;

WPI; 2001-488827/53.

Vaccine for immunizing against human immunodeficiency virus has mixture or linear array of peptides comprising immunodominant T-helper epitopes and major histocompatibility complex cytotoxic T-lymphocyte epitopes.

Claim 1; Page 24; 33pp; English.

The present invention relates to human immunodeficiency virus (HIV) and in particular to a human leukocyte antigen (HLA)-based HIV vaccine. The vaccine comprises a mixture or linear array of peptides, or its variants, where the peptides contain immunodominant T-helper (Th) epitopes and major histocompatibility complex (MHC) cytotoxic T- lymphocyte (CTL) epitopes and the linear array of peptides are preferably expressed in additional anhara. The vaccine is useful for immunising a patient against HIV and focuses immune response on many dominant and subdominant CTL epitopes of HIV. DNA or live vectors with linear arrays of CTL epitopes can be used as either primes or boosts of peptides or of each other to optimally give CTL anti-HIV responses. The vaccine induces